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DATE: Friday, October 11, 2002

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DB=U	SPT; PLUR=YES; OP=ADJ					
L9	L8 and maize	32	L9			
L8	L7 and overlap	59	L8			
L7	L6 and GUS	258	L7			
L6	L4 and (ac or activator)	982	L6			
L5	L4 and (ac or acitvator)	494	L5			
L4	L3 and (ds or dissociation)	1675	L4			
L3	L2 and transgenic	1688	L3			
L2	homologous recombination and plant	2716	L2			
L1	homologous recombination and plant?	1415	L1			

END OF SEARCH HISTORY

WEST Search History

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L1 (recombination and plant) [ti]

4 L1

END OF SEARCH HISTORY

NEWS 27

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=> s l1 and transgenic L2 190 L1 AND TRANSGENIC

=> d 1-2 ti

- L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
- TI Whole cell engineering by mutagenizing a substantial portion of a starting genome and combining mutations with optional reiteration
- L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
- TI Compositions and methods for targeted gene insertion

=> d 1-2 pi

L3		SWER					COPYRIGHT 2002 ACS DATE APPLICATION NO. DATE											
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ΡI	WO	2001	0965	51	A:	2	2001	1220		W	0 20	01-U	S193	67	2001	0614		
	WO	2001	1096551 A3		3	20020523			= 111				•					
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			PT,	RO,	RU													
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			DE,	DK,	ES,	FI,	FR,	GB,	GR,	ΙE,	IT,	LU,	MC,	NL,	PT,	SE,	TR,	BF,

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                                         AU 2002-11402
     AU 2002011402
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
L3
                                     APPLICATION NO. DATE
     PATENT NO.
                   KIND DATE
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     WO 2000075289 A1 20001214 WO 2000-US15783 20000608
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            CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
            IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
            MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
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            CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
=> s 12 and (ds or dissocation)
            3 L2 AND (DS OR DISSOCATION)
=> del 14 y
=> s 12 and (ds or dissociation)
            3 L2 AND (DS OR DISSOCIATION)
=> dup rem 14
PROCESSING COMPLETED FOR L4
             2 DUP REM L4 (1 DUPLICATE REMOVED)
=> d 1-2 ti
     ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
L5
ΤI
     Compositions and methods for targeted gene insertion
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
L5
                                                     DUPLICATE 1
     The maize transposable element Ac induces recombination between the donor
TI
     site and an homologous ectopic sequence
=> d 2 ab
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
L_5
                                                     DUPLICATE 1
AB
     The prominent repair mechanism of DNA double-strand breaks formed upon
     excision of the maize Ac transposable element is via nonhomologous end
     joining. In this work we have studied the role of homologous
     recombination as an addnl. repair pathway. To this end, we
     developed an assay whereby .beta.-Glucuronidase (GUS) activity is restored
     upon recombination between two homologous ectopic (nonallelic) sequences
     in transgenic tobacco plants. One of the
     recombination partners carried a deletion at the 5' end of GUS and an Ac
     or a Ds element inserted at the deletion site. The other
     partner carried an intact 5' end of the GUS open reading frame and had a
     deletion at the 3' end of the gene. Based on GUS reactivation data, we
     found that the excision of Ac induced recombination between ectopic
     sequences by at least two orders of magnitude. Recombination events,
    visualized by blue staining, were detected in seedlings, in pollen and in
    protoplasts. DNA fragments corresponding to recombination events were
    recovered exclusively in crosses with Ac-carrying plants,
    providing phys. evidence for Ac-induced ectopic recombination. The
    occurrence of ectopic recombination following double-strand breaks is a
    potentially important factor in plant genome evolution.
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BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

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=> d 2 pi
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
                                                       DUPLICATE 1
=> d 2 so
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
                                                      DUPLICATE 1
L5
SO
     Genetics (1997), 146(3), 1143-1151
     CODEN: GENTAE; ISSN: 0016-6731
=> d 2 au
L5
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
                                                      DUPLICATE 1
ΑU
     Shalev, Gil; Levy, Avraham A.
=> s 12 and recombination
          190 L2 AND RECOMBINATION
=> del 16 y
=> s 12 and (cre of flp) \
MISSING OPERATOR FLP) \
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nested terms that are not separated by a logical operator.
=> s 12 and (cre of flp)
             0 L2 AND (CRE OF FLP)
L6
=> s 12 and (cre or flp)
             2 L2 AND (CRE OR FLP)
L7
=> dup rem 17
PROCESSING COMPLETED FOR L7
              2 DUP REM L7 (0 DUPLICATES REMOVED)
L8
=> d 1-2 ti
     ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
L8
     Use of rice MLH1 gene in inhibition of DNA mismatch repair to generate
TΙ
     hypermutable strains for plant breeding
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
1.8
     Methods and compositions for genomic modification by site-specific
TT
     integration
=> d 2 ab
     ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
L8
     The present invention provides methods of site-specifically integrating a
AB
```

The present invention provides methods of site-specifically integrating a polynucleotide sequence of interest in a genome of a eukaryotic cell, as well as, enzymes, polypeptides, and a variety of vector constructs useful therefore. In the method, a targeting construct comprises, for example, (i) a first recombination site and a polynucleotide sequence of interest, and (ii) a site-specific recombinase, which are introduced into the cell. The genome of the cell comprises a second recombination site. Recombination between the first and second recombination sites is facilitated by the site-specific recombinase. The invention describes compns., vectors, and methods of use thereof, for the generation of transgenic cells, tissues, plants, and animals. The integration frequency into an attB site located on an EBV plasmid with

phage .phi.C31 integrase/recombinase in mammalian cells is impressively high and several orders of magnitude higher than the frequencies of random integration or homologous recombination, highlighting the utility of this invention. The compns., vectors, and methods of the present invention are also useful in gene therapy techniques.

=> d 2 pi

L8ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS KIND DATE APPLICATION NO. DATE PATENT NO. ---------_____ -----PΙ WO 2000011155 A1 20000302 WO 1999-US18987 19990819 W: AU, CA, JP RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE AU 9958985 A1 20000314 AU 1999-58985 19990819

=> d ab

L8 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS

Compns. and methods for inhibiting the cellular mismatch repair system in AB a plant host cell are provided. Compns. include the cDNA and amino acid sequence of a rice MLH1 (mutL homolog 1). The nucleic acid mols. and proteins of the invention find use in increasing the efficiency of targeted gene mutation and homologous recombination in plants via inhibition of the plant cellular mismatch repair system. The plant cellular mismatch repair system is inhibited through the use of transposon tagging of a MLH1 gene, sense- and antisense-suppression of a MLH1 gene, antibody binding to a MLH1 polypeptide or variant polypeptide, targeted mutagenesis of specific amino acid residues of a plant MLH1 gene, and competition with a mismatch repair impaired MLH1 polypeptide through transgenic over-expression of the impaired polypeptide. Also provided are transformed plant cells, plant tissues, plants , and seeds. Mutated MLH1 protein binds substrate with a similar affinity to that obsd. for corresponding non-mutated endogenous MLH1 protein. Addnl. methods that are provided include the detection of, location or removal of as little as one base pair mismatch in a DNA duplex and the generation of plants with reversible male sterility for applications in hybrid generation. Increase of mutagenesis efficiency facilitates genetic modification of **plants** for applications including but not limited to agronomics, insect resistance, disease resistance, herbicide resistance, sterility, grain characteristics and com. products.

L9 0 L2 AND OVERLAP

=> s 12 and gus
L10 15 L2 AND GUS

=> dup rem 110
PROCESSING COMPLETED FOR L10
L11 8 DUP REM L10 (7 DUPLICATES REMOVED)

=> s 12 and overlap

=> d 1-8 tui
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- L11 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
- TI A sensitive transgenic plant system to detect toxic inorganic compounds in the environment
- L11 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
- TI Enhanced homologous recombination caused by the non-transcribed spacer of the rDNA in Arabidopsis
- L11 ANSWER 3 OF 8 AGRICOLA DUPLICATE 3
- TI Meiotic stability of transgene expression is unaffected by flanking matrix-associated regions.
- L11 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4
- TI The maize transposable element Ac induces recombination between the donor site and an homologous ectopic sequence
- L11 ANSWER 5 OF 8 AGRICOLA DUPLICATE 5
- TI Gene targeting and instability of Agrobacterium T-DNA loci in the plant genome.
- L11 ANSWER 6 OF 8 AGRICOLA
- TI Development of a binary vector system for **plant** transformation based on the supervirulent Agrobacterium tumefaciens strain Chry5.
- L11 ANSWER 7 OF 8 AGRICOLA
- TI Enhancement of somatic intrachromosomal homologous recombination in Arabidopsis by the HO endonuclease.
- L11 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2002 ACS
- TI Method of transforming plant and vector therefor
- => d 2 so
- L11 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
- SO Molecular Genetics and Genomics (2001), 266(4), 546-555 CODEN: MGGOAA; ISSN: 1617-4615
- => d 3 so
- L11 ANSWER 3 OF 8 AGRICOLA DUPLICATE 3
- SO Molecular breeding: new strategies in plant improvement, 1998. Vol. 4, No. 1. p. 47-58
 Publisher: Dordrecht; Boston: Kluwer Academic Publishers, c1995-CODEN: MOBRFL; ISSN: 1380-3743
- => d 4 so
- L11 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4
- SO Genetics (1997), 146(3), 1143-1151 CODEN: GENTAE; ISSN: 0016-6731
- => d 4 ab
- L11 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4
- AB The prominent repair mechanism of DNA double-strand breaks formed upon excision of the maize Ac transposable element is via nonhomologous end joining. In this work we have studied the role of homologous recombination as an addnl. repair pathway. To this end, we

developed an assay whereby .beta.-Glucuronidase (GUS) activity is restored upon recombination between two homologous ectopic (nonallelic) sequences in transgenic tobacco plants. One of the recombination partners carried a deletion at the 5' end of GUS and an Ac or a Ds element inserted at the deletion site. The other partner carried an intact 5' end of the GUS open reading frame and had a deletion at the 3' end of the gene. Based on GUS reactivation data, we found that the excision of Ac induced recombination. between ectopic sequences by at least two orders of magnitude. Recombination events, visualized by blue staining, were detected in seedlings, in pollen and in protoplasts. DNA fragments corresponding to recombination events were recovered exclusively in crosses with Ac-carrying plants, providing phys. evidence for Ac-induced ectopic recombination. The occurrence of ectopic recombination following double-strand breaks is a potentially important factor in plant genome evolution.

=> d 5 ab

L11 ANSWER 5 OF 8 AGRICOLA

DUPLICATE 5

To develop a model system for studies of homologous recombination in plants, transgenic Nicotiana tabacum and Nicotiana plumbaginifolia lines were generated harbouring a single target T-DNA containing the negative selective codA gene encoding cytosine deaminase (CD) and the beta-glucuronidase (GUS) gene. Subsequently, the target lines were transformed with a replacement-type T-DNA vector in which the CD gene and the GUS promoter had been replaced with a kanamycin-resistance gene. For both Nicotiana species kanamycin-resistant lines were selected which had lost the CD gene and the GUS activity. One tobacco line was the result of a precise gene targeting event. However, most other lines were selected due to a chromosomal deletion of the target locus. The deletion frequency of the target locus varied between target lines, and could be present in up to 20% of the calli which were grown from leaf protoplasts. T-DNA transfer was not required for induction of the deletions, indicating that the target loci were unstable. A few lines were obtained in which the target locus had been deleted partially. Sequence analysis of the junctions revealed deletion of DNA sequences between microhomologies. We conclude that T-DNAs, which are stable during plant development as well as in transmission to the offspring, may become unstable during propagation in callus tissue. The relationships between callus culture, genetic instability and the process of T-DNA integration and deletion in the plant genome are discussed.

=> d 5 so\
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L11 ANSWER 5 OF 8 AGRICOLA

SO The Plant journal: for cell and molecular biology, Apr 1997. Vol. 11, No. 4. p. 717-728

Publisher: Oxford: BIOS Scientific Publishers Ltd and Blackwell Sciences Ltd.

ISSN: 0960-7412

L11 ANSWER 7 OF 8 AGRICOLA

The HO endonuclease promotes gene conversion between mating-type alleles in yeast by a DNA double-strand break at the site of conversion (the MAT-Y/Z site). As a first step toward understanding the molecular basis of homologous recombination in higher plants, we demonstrate that expression of HO in Arabidopsis enhances intrachromosomal recombination between inverted repeats of two defective beta-glucuronidase (qus) genes (GUS- test construct). One of these genes has the Y/Z site. The two genes share 2.5 kb of DNA sequence homology around the HO cut site. Somatic recombination between the two repeats was determined by using a histochemical assay of GUS activity. The frequency of Gus+ sectors in leaves of F1 plants from a cross between parents homozygous for the GUS- test construct and HO, respectively, was 10-fold higher than in F1 plants from a cross between the same plant containing the GUStest construct and a wild-type parent. Polymerase chain reaction analysis showed restoration of the 5' end of the GUS gene in recombinant sectors. The induction of intrachromosomal gene conversion in Arabidopsis by HO reveals the general utility of site-specific DNA endonucleases in producing targeted homologous recombination in plant genomes.

=> d 7 so

L11 ANSWER 7 OF 8 AGRICOLA

SO The Plant cell, Nov 1996. Vol. 8, No. 11. p. 2057-2066
Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989CODEN: PLCEEW; ISSN: 1040-4651

=> d 8 ab

L11 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2002 ACS

Provided is a method of plant transformation at a high efficiency and which permits the prepn. in the subsequent generation of a transgenic plant contg. the desired genes but not the drug-resistant genes used as the selection marker. The method comprises transforming a plant by means of Agrobacterium and is characterized by co-transforming plant cells with a first T-DNA (1) which contains the drug-resistant genes and a second T-DNA (2) which contains a desired gene and is included into a hybrid vector. The hybrid vector is prepd. by the homologous recombination between the acceptor vector and the intermediate vector in Agrobacterium. The acceptor vector contains at least (a) a DNA region having the function of plasmid replication which is functional in Agrobacterium and Escherichia coli, (b) a DNA region contg. virulent vir B and vir G genes of the Ti plasmid pTiBo542 of Agrobacterium tumefaciens, and (c) a DNA region which is homologous with part of the intermediate vector and is capable of homologous recombination via that part in Agrobacterium. The intermediate vector contains at least (i) a DNA region having the function of plasmid replication which is effective in Escherichia coli but not in Agrobacterium, (ii) a DNA region which is homologous with part of the above acceptor vector and is capable of homologous recombination via that part in Agrobacterium, and (iii) a DNA region which constitutes at least part of the second T-DNA (2). The method was exemplified by introducing the GUS gene into tobacco and rice.

SO PCT Int. Appl., 54 pp. CODEN: PIXXD2

=> d 8 pi

L11	ANSWER 8 OF	8 CAPLUS	COPYRIGHT	2002 ACS
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	EP 687730	A1	19951220	EP 1995-902308 19941206
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